Chapter 6

Marketplace Solutions

Marketplace solutions to aviation system capacity problems rely primarily on competitive, free-market influences. They involve the interests not only of the airlines and airport authorities but also of other aviation industry groups, local government organizations, and local communities. This diversity of special interests makes predicting, managing, and integrating marketplace solutions inherently difficult. To add to the difficulty, the major air carriers today continue to face the uncertainty of increasing costs and decreasing revenues. However, operating losses were less widespread in 1993 than in 1992, and over half of the major carriers made an operating profit. In fact, the airline industry seems to be undergoing an evolutionary step that includes an increase in the importance of lower-cost regional/commuter airlines and a relative decline in the importance of hubs.

6.1 Regional/Commuter Carriers

The growth of the regional/commuter airlines continues to outpace the growth of the larger air carriers. Small- and medium-market routes, without enough traffic to support the larger jets of the major air carriers, can support small jets and turboprops.

The growth of the regional/commuter airlines, i.e., air carriers that provide regularly scheduled passenger service and whose fleets are composed predominantly of aircraft having 60 seats or less, continues to outpace the growth of the larger air carriers.[1] Total revenue passenger enplanements for the regional/commuter airlines increased by 10 percent in 1993. The major air carriers have been dropping short-haul routes on which they are losing money, and these markets are being served profitably by regional/commuter carriers. Small- and medium-market routes, without enough traffic to support the larger jets of the major air carriers, can support small jets and turboprops. In addition, these smaller aircraft can meet demands for high-frequency service. Frequent flights attract business as well as leisure travelers. The introduction of new state-of-the-art aircraft is also expected to contribute to greater public acceptance and stimulate higher growth.

1. Based on FAA Aviation Forecasts, Fiscal Years 1994-2005, FAA–APO 94–1, March 1994.

Regional/commuter airlines have been marked by an increased integration of operations with the operations of the large air carriers through code-sharing agreements and acquisition of regional/commuter carriers by the large air carriers. Many of the regional/commuter airlines are owned, totally or in part, by their larger code-sharing partners, and still others are owned by other regional/commuter airlines. In addition, the industry has become more and more concentrated, and, with the decline in the number of carriers, the largest regional/commuter airlines account for most of the passenger enplanements.

The smaller regional/commuter carriers often bypass hub airports and provide direct, point-to-point service between cities that were previously connected only through a hub. This frees slots at the often overcrowded hub airports, thus increasing capacity and easing congestion and delay.

The larger regional/commuter carriers generally provide high-frequency flights directly to hub airports to feed passengers to the major carriers. Their flights are timed to connect with the flights of the major carriers they feed. The increasing number of these regional/commuter carrier flights uses up capacity at the hub airport. The mix of smaller, slower aircraft with the large jets of the major air carriers can also complicate air traffic control procedures, adding further to the congestion and delay at the airport. At hub airports with well-established networks of regional feeder airlines, like Seattle-Tacoma International in the Pacific Northwest and Boston Logan International in northern New England, air taxi/commuter aircraft account for about 40 percent of total operations.

The emerging technology of tiltrotor aircraft could absorb much of the demand for short-haul flights of 500 miles or less.

VSTOL aircraft have the potential to reduce runway usage since they are not runway dependent.

To integrate tiltrotor and other VSTOL aircraft into the aviation system, an infrastructure must be developed that addresses the special needs of vertical flight.

6.2 Civil Tiltrotor

The emerging technology of tiltrotor aircraft could absorb much of the demand for short-haul flights of 500 miles or less. Tiltrotor is still considered by many to be an unknown and costly technology. Tiltrotor aircraft have yet to be proven technically feasible and economically competitive in the commercial market. However, the expected higher operating costs of the tiltrotor may be partially offset by the delay-cost savings that would result from reduced airport congestion and the convenience and other economic benefits that would accrue to passengers and other users.

These vertical- or short-take-off-and-landing (VSTOL) aircraft have the potential to reduce runway usage since they are not runway dependent. Vertiports at hub airports would free runway slots and provide additional airfield capacity for conventional, fixed-wing aircraft. Vertiports in cities would provide service from city center to city center, bypassing airports altogether. If successful, tiltrotor aircraft may eventually replace conventional regional/commuter aircraft on the short-haul routes that link airports near smaller cities and towns with large hub airports and major city centers. Vertiports promise to be less disruptive to local communities than wholesale airport runway expansions.

To integrate tiltrotor and other VSTOL aircraft into the aviation system and take advantage of their capability to land on other than a runway, an infrastructure must be developed that addresses the special needs of vertical flight. Vertiports and separate air traffic control procedures for instrument flight rules (IFR) must be developed that do not significantly affect conventional aircraft operations.

6.3 The Next Generation of Aircraft

The effects of next-generation aircraft need to be considered in the long-range planning for airport expansion. For example, the world's major aircraft manufacturers are developing plans for a 500- to 800-seat superjumbo jet intended for the very high density inter-city and long-range intercontinental routes that could support such a large aircraft. These new superjumbo jets would be double-deck aircraft weighing 1.2 million pounds or more, with a wingspan of at least 260 feet, and a length of 260 or more feet. Compare this to a Boeing 747-400, with a maximum takeoff weight of about 830,000 pounds, a wingspan of 213 feet, and a length of 232 feet.

Larger aircraft capable of carrying more passengers bring the economies of scale that would enable airlines to cut costs and contend with congested airports that are limited in size and unable otherwise to expand their capacity.

And, it is not just the largest intercontinental airports that would be affected by new, larger aircraft. The Boeing 777 will be a widebody twin jet capable of carrying about 400 passengers for distances of up to 4,200 nautical miles (nm). The B-777 aircraft will have a wingspan of nearly 200 feet, and Boeing is considering an optional folding-wing design that would reduce the aircraft's wingspan on the ground and permit the aircraft to operate at tight-geometry airports like LaGuardia. In addition, the new aircraft will have a maximum gross takeoff weight of about 590,000 pounds, and later, stretched versions of the aircraft may have a maximum gross takeoff weight as high as 650,000 pounds.

These new aircraft, then, will result in major new demands on airports. Their larger size, significantly greater weight, and large number of passengers would require redesigned terminals and gate areas, new ground support facilities, increased pavement strengths for runways, taxiways, and aprons, and wider taxiway separations. Larger aircraft capable of carrying more passengers bring the economies of scale that would enable airlines to cut costs and contend with congested airports that are limited in size and unable otherwise to expand their capacity.

6.4 Airport Expansion and the Local Community

Marketplace solutions to airport capacity problems include the development of new hub airports, the expanded use of existing commercial service airports, the expanded use of reliever airports, the joint civilian and military use of existing military airfields, and the conversion of former military airfields to civilian use.

A community's overall acceptance of airport expansion and increased airport activity is often predicated on the perception of aircraft noise, rather than actual noise levels. In order to generate community support for capacity increases, it is essential that airport operators are seen by their communities as working to control noise levels and mitigate noise impacts. Curfews and other noise restrictions can be inconvenient for passenger carriers, but they create particular problems for air-cargo firms that must fly at night to provide morning delivery of packages and freight. In addition, cargo carriers tend to rely on older passenger aircraft that have been remodeled to handle cargo, and these aircraft often produce more noise than newer jets. Older Stage II aircraft are to be phased out and completely replaced by the much quieter Stage III aircraft by the year 2000. This will greatly reduce the area around an airport affected by aircraft noise and is likely to reduce local opposition to airport development.

Airport development can generate additional jobs and airport revenues, encourage land development, and otherwise stimulate economic growth. Information on this economic impact has proven useful in generating public support for proposed airport improvements, and airports must focus on their overall effect on the local economies. An economic impact analysis can provide an estimate of the economic significance of an airport to the surrounding area. Direct impact is related to specific projects, services, and facilities at an airport. Indirect impact is linked to the economic activities of off-site enterprises serving airport users, such as hotels.

Airlines and other airport users will seek solutions for a delay-problem airport when the delays there are no longer tolerable. But before such a decision is made, the solution must make operational and economic sense. Airlines conduct marketing surveys and feasibility studies to verify such things as the adequacy of the origin and destination market and the economic viability of their proposed investment. Airport authorities, local communities, and other interested members of the aviation industry can facilitate an airline's decision process by conducting their own surveys and studies. But, in addition, they must advertise and market within the industry not only the characteristics of their airport that make it a good choice for the airlines, but also the willingness of the local community to absorb the increased traffic.

Examples of marketplace solutions to airport capacity problems include the development of new hub airports, the expanded use of existing commercial service airports, the expanded use of reliever airports, the joint civilian and military use of existing military airfields, and the conversion of former military airfields to civilian use.

6.4.1 New Hubs at Existing Airports

As one solution to the growth in flight delays at traditional connecting hub airports, airlines may develop new hubs at existing airports. A new connecting hub could produce delay savings by diverting some of the growth that would otherwise occur at nearby primary hub airports. Hub airports developed since airline deregulation have exhibited the following characteristics:

- strong origin and destination market,
- good geographic location,
- expandable airport facilities,
- multiple IFR approach capabilities,
- strong local economy and availability of balanced work force, and
- ability to accommodate existing/planned service.

More than two dozen potential new hub airports have been identified that are located more than 50 miles from airports with forecast delay problems and have the potential runway capacity to accommodate significantly increased airport operations. Each has the potential to permit multiple approach streams under IFR. Hence, they meet the first, second, and fourth characteristics. Other airports may meet the third and fourth characteristics through appropriate capital investment. Additional analysis would be required to determine which airports have viable economies, both from the local and airline perspective, as well as the local support needed for expansion into a hub airport. Appendix I provides an example of the type of analysis that may be performed to determine the potential consequences of establishing a new hub airport. The example is based on *A Case Study of Potential New Connecting Hub Airports, Report to Congress* and looks at four airports, Huntsville

More than two dozen potential new hub airports have been identified in the vicinity of airports with forecast delay problems. Each has the potential to permit multiple approach streams under IFR.

International Airport, Port Columbus International Airport, Sacramento Metropolitan Airport, and Oklahoma City Will Rogers World Airport.

6.4.2 Expanded Use of Existing Commercial Service Airports

Expanded use of nearby airports that already have commercial service can ease congestion in a particular market.

This offers an ideal strategy for airlines providing short-haul, regional service, particularly for an airline emphasizing point-to-point service.

Expanded use of nearby airports that already have commercial service can ease capacity problems at primary hub airports by spreading commercial aircraft operations among additional airports near the primary airport. In contrast to new hubs, the expanded use of existing commercial service airports is primarily intended to relieve congestion in a particular market, not to constitute a market of its own.

This offers an ideal strategy for airlines providing short-haul, regional service, particularly for an airline emphasizing point-to-point service rather than feeding passengers to the major carriers at the hub airports. The regional carrier can move into a nearby underutilized airport, where they can operate at lower cost, avoid the congestion and costly delays caused by overcrowding, and avoid direct competition with the major carriers.

For each of the 23 current delay-problem airports, a preliminary list of airports located in the vicinity and served by commercial air traffic, was compiled. This is shown in Table 6-1. A number of military airports and airports not currently served by commercial air traffic have been added to the list. As congestion becomes greater at the delay-problem airports, passengers may choose to travel to the alternative airports. This traffic diversion would tend to decrease delays at the delay-problem airport.

Table 6-1. Preliminary List of Airports Located Near the 23 Delay-Problem Airports

Delay-problem Airport†		Supplemental Airport
Atlanta Hartsfield	ATL	Athens
		Macon
		Columbus (100 mi)
		Chattanooga, TN (100 mi)
Boston	BOS	Manchester, NH
		Portland, ME
		Portsmouth, NH
		Providence, RI
		Worcester, MA
		Bedford, MA
		Ashville (100 mi)
Charlotte	CLT	Hickory
		Greensboro (90 mi)
		Greer, SC (90 mi)
		Winston-Salem (60 mi)
		Columbia, S.C. (100 mi)
Chicago O'Hare	ORD	Aurora
		Chicago Midway
		Meigs Field
		Rockford
		Waukegan
		West Chicago (Du Page)
		Wheeling
		Gary, IN
		NAS Glenview
Dallas-Ft. Worth	DFW	NAS Fort Worth, Joint Reserve Base (formerly Carswell AFB)
		Dallas-Love Field
		Denton
		Fort Worth Alliance
		Fort Worth Meacham
		McKinney
		Mesquite
		Waco (80 mi)
Denver	DEN	Colorado Springs (80 mi)
Detroit	DTW	Detroit City
		Flint
		Pontiac
		Lansing (80 mi)
		Toledo, OH (60 mi)
		Selfridge ANG
		Willow Run
		Windsor, Ontario, Canada
Honolulu	HNL	Kailua
Houston	IAH	Corpus Christi
		Ellington
		Galveston
		Houston Hobby
Los Angeles	LAX	Burbank
		Long Beach
		Ontario
		Oxnard
		Palmdale
		San Bernardino
		Santa Ana
Miami	MIA	Ft. Lauderdale
		West Palm Beach
Minneapolis	MSP	St. Paul (Downtown)
		Mankato (60 mi)
		Rochester (77 mi)
		Eau Claire, WI (85 mi)
		St. Cloud (70 mi)
New York	JFK	Farmingdale
		Islip/Long Island
		Stewart/Newburgh (60 mi)
		White Plains
Newark	EWR	Trenton
		Stewart/Newburgh, NY (60 mi)
		White Plains, NY
		Atlantic City, NJ
		Morristown
		Essex County
		Teterboro
Orlando	MCO	Daytona Beach
		Ft. Pierce (100 mi)
		Gainsville (100 mi)
		Melbourne (60 mi)
		Tampa (70 mi)
		Vero Beach (90 mi)
Philadelphia	PHL	Allentown
		Lancaster (70 mi)
		Reading (60 mi)
		Willow Grove NAS
		Trenton, NJ
		Atlantic City, NJ
		Wilmington, DE
Phoenix	PHX	Prescott (80 mi)
		Williams Gateway
		Tucson (110 mi)
Pittsburgh	PIT	Johnstown
		Latrobe
		Morgantown, WV (60 mi)
San Francisco	SFO	Concord
		Oakland
		San Jose
		Santa Rosa
		Moffett Field NAS
		Hamilton Field
St. Louis	STL	Scott AFB
Seattle	SEA	Everett/Paine Field
		McChord AFB
Washington	DCA	Baltimore, MD
		Hagerstown, MD (60 mi)
		Charlottesville, VA (100 mi)
		Richmond, VA (100 mi)
		Andrews AFB
Washington	IAD	Baltimore, MD
		Hagerstown, MD (60 mi)
		Charlottesville, VA (100 mi)
		Richmond, VA (100 mi)
		Andrews AFB

† Airports having greater than 20,000 hours of delay for 1993 as reported by FAA Office of Policy and Plans.

6.4.3 Enhance Reliever and General Aviation (GA) Airport System

The segregation of aircraft operations by size and approach speed increases effective capacity at each airport type because required time and distance separations are reduced between planes of similar size.

General Aviation (GA) provides access to more than 17,000 facilities in the Nation's air transportation system. By providing on-demand direct transportation to all of these locations, GA enhances overall system capacity in our NAS and extends access to millions of customers.

In FY95, a group consisting of FAA and industry representatives will convene to review the current FAA airspace capacity plan and policies in determining whether general aviation should be recognized within those FAA documents as a system wide capacity "enhancer." This effort will necessitate an inclusion of contemporary discussions of the "Free Flight" concept and its potential to enhance capacity in the national airspace system. The group will also explore the possibility of creating a national airports policy that seeks to maintain or increase the number of public access airports available to general aviation and to create a practical and viable system of reliever airports.

Reliever and GA airports ease capacity problems at primary airports by attracting smaller/ slower aircraft away from delay-problem airports. The segregation of aircraft operations by size and approach speed increases effective capacity at each airport type because required time and distance separations are reduced between planes of similar size.

The FAA provides assistance for construction and improvements at reliever airports under the Airport Improvement Program. The objective of this assistance is to increase utilization of reliever airports by building new relievers, improving the facilities and navigational aids at existing relievers, and reducing the environmental impact on neighboring communities. Because they serve primarily general aviation aircraft, reliever airports can be effective with significantly less extensive facilities than commercial service airports.

Reliever airports can be expected to play significant roles in reducing congestion and delay at delay-problem airports, especially those where small/slow aircraft constitute a significant portion of operations. Of the 32 airports forecast to exceed 20,000 hours of annual aircraft delay in 2003 without further improvements, 14 have 15 percent or more GA operations and five of these have 25 percent or more GA operations.[2]

2. Based on Terminal Area Forecasts FY 1993–2005, FAA-APO-93-9, July 1993, operations data for 1991.

6.4.4 Conversion of Closing Military Airfields and Joint Use of Military Airfields

As one part of its overall strategy to enhance aviation system capacity, the FAA is pursuing a series of initiatives with the Department of Defense and state and local governments for the implementation of joint civilian and military use of existing military airfields and the conversion of closing military facilities to civilian use.

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Commercial service airports, particularly in large metropolitan areas, are experiencing congestion and delays on the airfield, in the terminals, and in ground access to the airport itself. In many cases, airport sponsors are unable to expand to develop the additional facilities needed to continue to provide quality service to air travelers and the airlines. Without additional capacity, the increasing aircraft operations and passenger growth forecast for the future will result in greater delays, more costly operations, and less efficient passenger service. In addition, airfield pavement designs will require capacity improvements and strengthening to accommodate the increasing number of larger, heavier aircraft in the air carrier and general aviation fleet. System planning studies have been conducted by many metropolitan areas and state planning organizations in attempts to identify new sites for the construction of new airports or for capacity development at existing airports.

Historically, the development of new airports and the construction of new runways and runway extensions at existing airports has offered the greatest potential for increasing aviation system capacity. These options for achieving major capacity increases are becoming more difficult due to surrounding community development, environmental concerns, shortage of available adjacent property and funding required, lack of public support, rival commercial and residential interests, and other competing requirements.

Within the past ten years, airport system planning and local governmental efforts have been successful in leading to the construction of only one major new commercial service airport, the new Denver International Airport. Other studies, in San Diego, Orange County south of Los Angeles, Seattle, Chicago, New York, Boston, and Miami, for example, have not resulted in identifying new airport sites or, very often, in developing support for major expansion of the existing air carrier airports.

Recent changes in the world's political and military situation, combined with efforts to reduce the Nation's deficit, have resulted in plans to close a number of military airfields and provided a one-time opportunity for State and local governments. Conversion of these military airfields into civil airports would provide significant aviation capacity gains with relatively small additional investments by the State and local governments. Most of these military airfields are designed to accommodate heavy wide-body aircraft and already have the 8,000 to 13,000 foot runway lengths necessary to support long-haul operations.

Currently, 36 major military airfields have become available for use as civil airports as a result of the Department of Defense (DOD) 1988, 1991, and 1993 military base closures. In addition, several large parcels of military property adjacent to other civil airports have become available for expansion of these airports. If the airfield or other portions of the bases are not conveyed for public use, the military proposes to sell these areas and use the proceeds to assist them in the realignment and closure of other facilities. Table 6-2 provides a listing of the potential civil role of closing military airfields, and Figure 6-1 shows the location of these closing military airfields.

Many of these airfields are conveniently located in the vicinity of congested metropolitan areas where the search for major new airports has been underway for years. Examples include: the Miami area where Homestead Air Force Base (AFB) has become available; Orange County, California, in which El Toro Marine Corps Air Station (MCAS) is located; Bergstrom AFB near Austin Texas, where the City had previously been planning to replace the Robert Mueller Municipal Airport with a new airport; Williams AFB near Phoenix; Pease AFB located 60 miles north of Boston Logan, where it could provide service to the metropolitan area north of Boston; and Norton AFB near San Bernardino in the Los Angeles area. Some of the smaller military airfields available for conversion are ideal for use as reliever airports relieving small/slow aircraft operations from the nearby commercial airports serving scheduled air carrier operations.

It is anticipated that about two thirds of the 36 airfields have the potential to become general aviation reliever airports initially, and, in the longer term, about one-half of these airports will continue to develop and become commercial service airports. Many of the remaining airfields will become general aviation airports, with several of the more rural airfields converted to other than airport purposes.

In addition to military airfield conversions to civil airports, there are about 21 military airfields now in operation accommodating joint civil and military use. For the most part, these joint-use airfields provide primary service to the communities and have a modest impact on system capacity. For example, in South Carolina, Charleston AFB provides primary commercial service for Charleston. Similarly, Myrtle Beach AFB, which is currently being transitioned to the Myrtle Beach Jetport, previously provided primary commercial air service through joint use to a community that might not otherwise have had air carrier access to the commercial system. Also, Dillingham Army Airfield (AAF), Hawaii, and Rickenbacker Air National Guard (ANG) Base, Columbus, Ohio, provide congestion relief to the airports at Honolulu International and Port Columbus International Airports respectively.

Table 6-2. Potential Civil Role of Closing Military Airfields

State	Airfield	Airfield ID*	Closure List	Closure Date	Community	Near-Term Role**
Alaska	Adak NAS	NUW	93	Aug 94	Adak Island	GA
Arizona	Williams AFB	IWA	91	30 Sep 93	Phoenix	RL
Arkansas	Eaker AFB	BYH	91	15 Dec 92	Blytheville	GA
California	Alameda NAS	NGZ	93	Sep 97	Oakland	RL
	Castle AFB	MER	91	30 Sep 95	Merced	GA
	El Toro MCAS	NZJ	93	Sep 97	Orange County	RL/CM
	Fritzsche AAF	OAR	91	Sep 95	Monterey	RL
	George AFB	VCV	88	15 Dec 92	Victorville	GA/CM
	Hamilton AAF	SRF	88	Apr 93	San Francisco	RL
	March AFB	RIV	93	31 Mar 96	Riverside	RL
	Mather AFB	MHR	88	30 Sep 93	Sacramento	RL
	Moffett NAS	NUQ	91	Jul 94	San Jose	(NASA/USN)
	Norton AFB †	SBD	91	31 Mar 94	San Bernardino	RL/CM
	Tustin MCAS	NTK	91	Jul 97	Orange County	RL
Florida	Cecil Field NAS	NZC	93	Oct 96	Jacksonville	RL/GA
	Homestead AFB	HST	93	31 Mar 94	Miami	RL/GA
	MacDill AFB	MCF	91	31 Mar 94	Tampa	(NOAA/USAF)
Guam	Agana NAS †	NGM	93	Apr 98	Guam	Guam Int'l
Hawaii	Barbers Point NAS	NAX	93	Sep 97	Honolulu	RL
Illinois	Chanute AFB		88	30 Sep 93	Rantoul	RL/GA
	Glenview NAS	NBU	93	Sep 95	Chicago	GA
	O'Hare AF Reserve	ORD	93	30 Sep 97	Chicago	O'Hare Int'l
Indiana	Grissom AFB	GUS	91	30 Sep 94	Peru	GA
Louisiana	England AFB	AEX	91	15 Dec 92	Alexandria	GA/PR
Maine	Loring AFB	LIZ	91	30 Sep 94	Limestone	
Maryland	Tipton AAF	FME	88	Apr 95	Baltimore/D.C.	RL
Massachusetts	Moore AAF	AYE	91	Sep 95	Boston	RL/CM/PR
Michigan	Detroit NAF	MTC	93	Sep 94	Detroit	(Selfridge AF Reserve)
	K.I. Sawyer AFB	SAW	93	30 Sep 95	Marquette	GA/CM
	Wurtsmith AFB	OSC	91	30 Jun 93	Oscoda	GA
Midway Island	Midway NAF	NQM	93	Oct 93	Midway Island	
Missouri	Richards-Gebaur	GVW	91	30 Sep 94	Kansas City	RL
New Hampshire	Pease AFB †	PSM	88	31 Mar 91	Portsmouth/Boston	Pease Int'l Trade Port
New York	Griffiss AFB	RME	93	30 Sep 95	Rome	GA
	Plattsburgh AFB	PBG	93	30 Sep 95	Plattsburgh	GA
Ohio	Rickenbacker ANG	LCK	91	30 Sep 94	Columbus	RL
Pennsylvania	Warminster NADC	NJP	91	Mar 96	Philadelphia	RL
South Carolina	Myrtle Beach AFB †	MYR	91	31 Mar 93	Myrtle Beach	Myrtle Beach Jetport
Tennessee	Memphis NAS	NQA	93	Oct 95	Memphis	RL
Texas	Bergstrom AFB	BSM	91	30 Sep 93	Austin	PR
	Dallas NAS	NBE	93	Oct 95	Dallas	GA
	Carswell AFB	FWH	91	30 Sep 93	Fort Worth	(USN/AF Reserve)
	Chase NAS	NIR	91	30 Sep 92	Corpus Christi	GA

* The airfield identifiers have been used in Figure 6–1 to indicate the location of these airfields.

** Airport roles: PR = Primary CM = Commercial RL = Reliever GA = General Aviation

† Military Airport Program (MAP) recipient

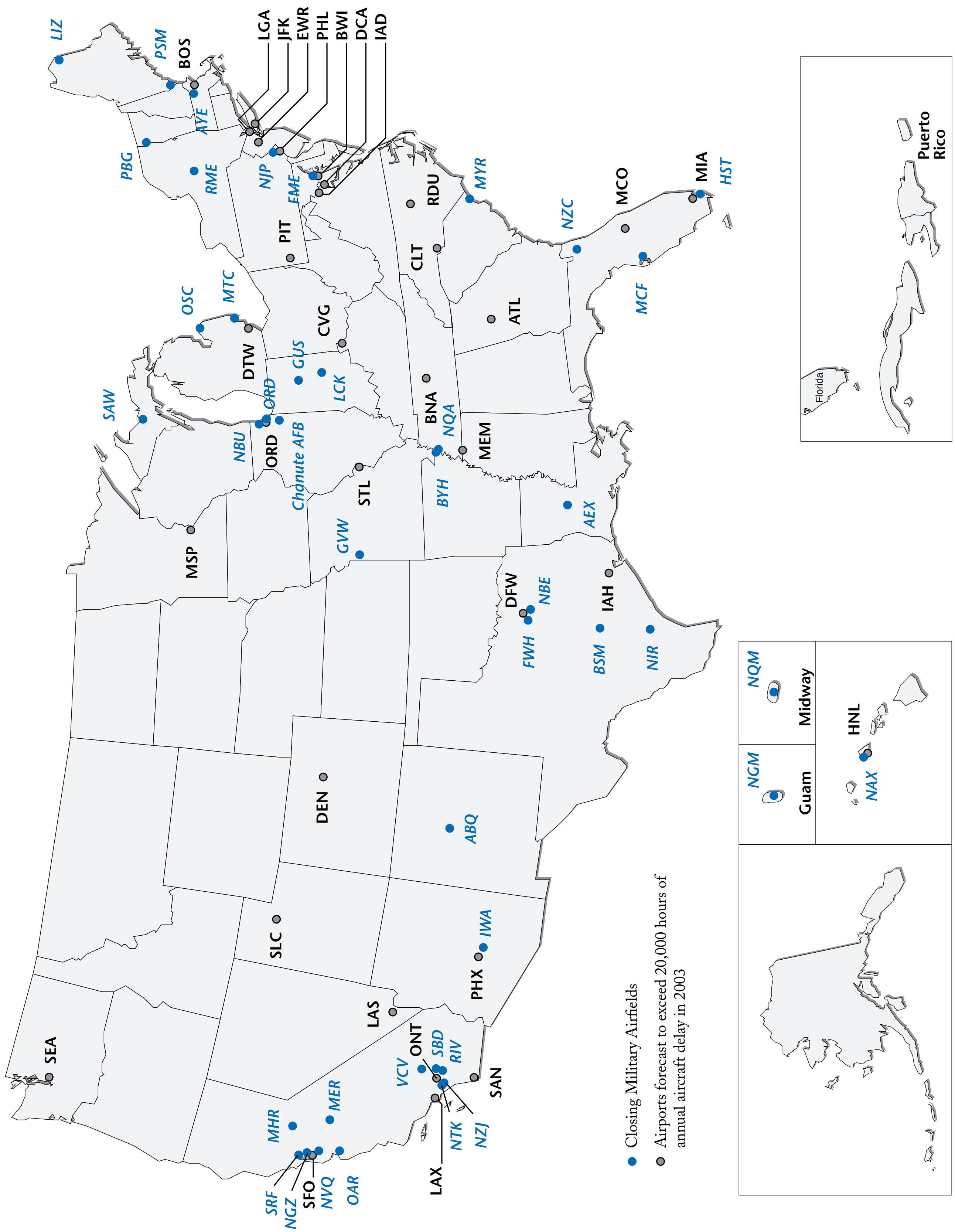

Figure 6-1. Location of Closing Military Airfields in Relation to Airports Forecast to Exceed 20,000 Hours of Delay in 2003

To assist in transitioning military airfields to civilian airports, the Military Airport Program (MAP), established as a funding set aside under the Airport Improvement Program (AIP), provides grant funding of airport master planning and capital development. The MAP allows the Secretary of Transportation to designate current or former military airfields for participation in the program. To participate, eligible airport sponsors apply to the FAA. In determining whether or not to designate a facility, the FAA will consider: (1) proximity to major metropolitan air carrier airports with current or projected high levels of delay; (2) capacity of existing airspace and traffic flow patterns in the metropolitan area; (3) the availability of local sponsors for civil development; (4) existing levels of operation; (5) existing facilities; and (6) any other appropriate factors.

The most important first step in converting a closing military airfield or setting up a joint-use facility is to establish the State or local government sponsorship for the proposed civil aviation operation.

Twelve current or former military airports have been designated thus far to participate in the MAP. These are: Stewart International Airport near Newburgh, New York; Ellington Field at Houston, Texas; Albuquerque International Airport, New Mexico; Scott Air Force Base, in Illinois; Myrtle Beach Air Force Base, in South Carolina; Agana International Airport, Guam; Manchester Municipal Airport, New Hampshire; Lincoln Municipal Airport, Nebraska; Lardo International Airport, Texas; Smyrna Airport, Tennessee; San Bernardino International Airport, California; and Pease International Trade Port, New Hampshire. Under the MAP, airports will receive funding for airport capital development, including rehabilitating airport pavements, terminals, lighting systems, improving access roads, automobile parking facilities, airport master plan studies, and other eligible projects necessary to convert a military airfield to an active civil airport.

The most important first step in converting a closing military airfield or setting up a joint-use facility is to establish the State or local government sponsorship for the proposed civil aviation operation. The conversion or joint use of military airfields is not a panacea for aviation system capacity problems, but it is an important component in the strategy of the State and local governments and the FAA to maximize the safe utilization of the Nation's aviation system.

6.4.5 Developing a Regional Airport System

The ultimate challenge for many delay-problem airports in the country in their efforts to implement capacity-enhancing improvements is the availability and expense of additional land. With no room to build independent parallel runways or new taxiways, commercial cargo and maintenance facilities, access roads, or parking facilities, an airport is faced with steadily increasing delays and severe constraints on growth in air traffic. Taking into account the characteristics of the market involved, airport authorities with delay-problem airports may need to look to development of a regional airport system.

In a regional airport system, various airports are identified to serve different roles and functions within the region. For example, one airport in the region may handle all or most of the international and long-haul traffic, while other airports handle the domestic and short-haul demand.

There are variations of a regional airport system in use in many of the major metropolitan areas, including New York, Chicago, Dallas-Fort Worth, Houston, Los Angeles, San Francisco, and Washington, D.C. This same concept has also been suggested in Boston and Seattle, with each proposing to introduce limited air carrier or commuter service at another airport in the area, Laurence G. Hanscom Field in Bedford, MA, and Snohomish County Paine Field in Everett, WA.

One study in Massachusetts demonstrated that development of scheduled air carrier service at the existing Hanscom Airport could be almost as effective as building a new airport in terms of relieving Boston-Logan. However, there is strong local opposition to this initiative, and consequently, there are no current proposals to develop scheduled, air carrier service at Hanscom. Current efforts are focusing instead on measures to enhance the role of existing air carrier airports servicing the outlying portions of the Logan market. Since the State has abandoned efforts to land bank a site for a new air carrier airport, creating a more effective regional airport system is critical to meeting the future forecasted need for air travel in the greater Boston market area.

6.5 Demand Management

The anticipated outcome of peak-hour pricing is an increase in the average number of passengers per flight through the use of larger aircraft and a decrease in general aviation and small commuter aircraft operations when demand is highest.

Slot allocations will only be able to reduce delay by effectively "capping" the total number of operations at the airport.

Generally, demand management attempts to make more efficient use of existing airport capacity by increasing the average number of passengers per aircraft operation and by making better use of under-utilized capacity in off-peak periods. Two methods of demand management are peak-hour pricing and slot allocation.

Peak-hour pricing attempts to operate through market forces by increasing the price of using an airport when demand is highest. Peak-hour pricing is not meant to encourage the transfer of air carrier passenger flights to off-peak hours (the price differential required to induce a plane load of passengers to travel off peak would be tremendous), but rather to provide an economic disincentive for smaller aircraft (without creating any outright restriction) to using air carrier runways during critical peak hours. The anticipated outcome of peak-hour pricing is an increase in the average number of passengers per flight through the use of larger aircraft and a decrease in general aviation and small commuter aircraft operations when demand is highest.

To redistribute air carrier passenger flights, it is generally more practical to use slot allocations rather than pricing mechanisms. However, as operations increase, there may not be enough extra capacity in the traditional off-peak time periods to accommodate additional operations without significant delays. At this point, slot allocations will only be able to reduce delay by effectively "capping" the total number of operations at the airport. This program can be cumbersome to execute both equitably and efficiently. Its use within this country has been restricted to the four high density traffic airports, Washington National, Chicago O'Hare, New York LaGuardia, and New York Kennedy, where delays have historically affected the performance of the National Airspace System (NAS).

While programs to redistribute demand may be less expensive to the airport owner than physical improvements, any actions that significantly raise the cost of air travel or limit the ability of the airlines to offer air service in response to passenger demand can have far-reaching implications on the region's economy. Air travel is not an economic product in itself, but a utility used for other purposes, e.g., business or pleasure. When the cost of this utility increases, or its efficiency diminishes, those economic activities that depend on air travel will be negatively affected. Therefore, any analysis of demand management strategies has to carefully consider these impacts prior to its implementation.

Proponents of demand management cite concern for the economic inequities imposed by congested facilities. During periods of congestion, each additional flight creates delays in all other competing flights that far exceed the delay cost experienced by the passengers and airline from that one additional flight. Due to these "externalities," the rational behavior of each airline in scheduling additional flights is in conflict with the collective interests of all users. Under these circumstances, demand management is viewed as necessary to maintain reasonable levels of cost and service at an airport. Demand management initiatives can also provide relief in a more timely manner than physical facility improvements. In that regard, they may be a useful "bridge" if, in the future, air travel demand increases at a rate that overwhelms the airport's ability to provide the requisite facilities.

The critical question is whether the premium prices that result directly or indirectly from demand management are sufficiently offset by savings in the costs associated with delay and congestion. The answer to this deceivingly simple question is usually quite complex and further complicated by the issue of who pays and who benefits.

6.6 Intermodalism

Aviation is a part of the national transportation system. Each mode of transportation within the system has specific strengths and weaknesses. The transportation system cannot work effectively if critical segments are not connected. No matter how good the individual parts of the system may be, the effectiveness of the overall system depends on the connections a passenger or consignment of cargo can make in getting from origin to destination.

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Intermodalism is a goal fostered under National Transportation Policy and the Intermodal Surface Transportation Efficiency Act enacted in 1991. Its purpose is to improve the speed, reliability, and cost effectiveness of the country's overall transportation system. One initial objective should be to devise an integrated transportation strategy to promote intermodal exchanges among highway, railway, waterway, and air transportation. Intermodalism is not intended to bypass the airports but to bring passengers to and from the airport and their point of origin and destination.

In the past, the emphasis at most airports has been on ground access for passengers via roads and highways. Airport planning studies should begin to investigate the feasibility of subway or train stations on the airport with easy access to passenger terminals and of cargo-handling facilities that enable quick, easy transfer among trucks, trains, and airplanes.

6.7 High-Speed Rail

High-speed rail is ideally suited for short-haul intercity trips and as a feeder for major hub airports, especially in the future when new airports may have to be built in outlying locations. These high-speed trains could replace many of the short-haul and feeder flights that add to the congestion and delay at the major hub airports.

High-speed passenger trains, which will reach speeds of 150 to 200 miles per hour, have been recommended or are being studied for use in several densely populated intercity transportation corridors, for example, Washington-Philadelphia-New York-Boston in the Northeast; Portland-Seattle-Vancouver in the Pacific Northwest; and Dallas-Fort Worth-Houston-San Antonio in Texas. Figure 6-2 illustrates these and several other examples of high-speed rail corridors that have been tentatively proposed. High-speed rail appears to be a reasonable transportation alternative, especially for densely populated urban corridors and distances of less than 450 miles, that would serve to reduce airport congestion at many delay-problem airports.

On the one hand, high-speed rail represents another competitive force for short-haul air traffic and can be seen as a threat to air carrier markets for trips shorter than 500 miles. Commercial air already provides a rapid intercity mass transportation system. On the other hand, high-speed rail is ideally suited for short-haul intercity trips and as a feeder for major hub airports, especially in the future when new airports may have to be built in outlying locations. These high-speed trains could replace many of the short-haul and feeder flights that add to the congestion and delay at the major hub airports. In fact, the airlines themselves may be partners in operating such trains, much like in Europe. Intercity high-speed rail systems would be designed for immediate access to the airport, with rail stations "inside" passenger terminals. In large metropolitan areas, high-speed rail could also provide the connection among multiple airports serving the region, carrying passengers during the peak-hours of the day and perhaps carrying cargo to and from the airports during the off-peak hours at night.

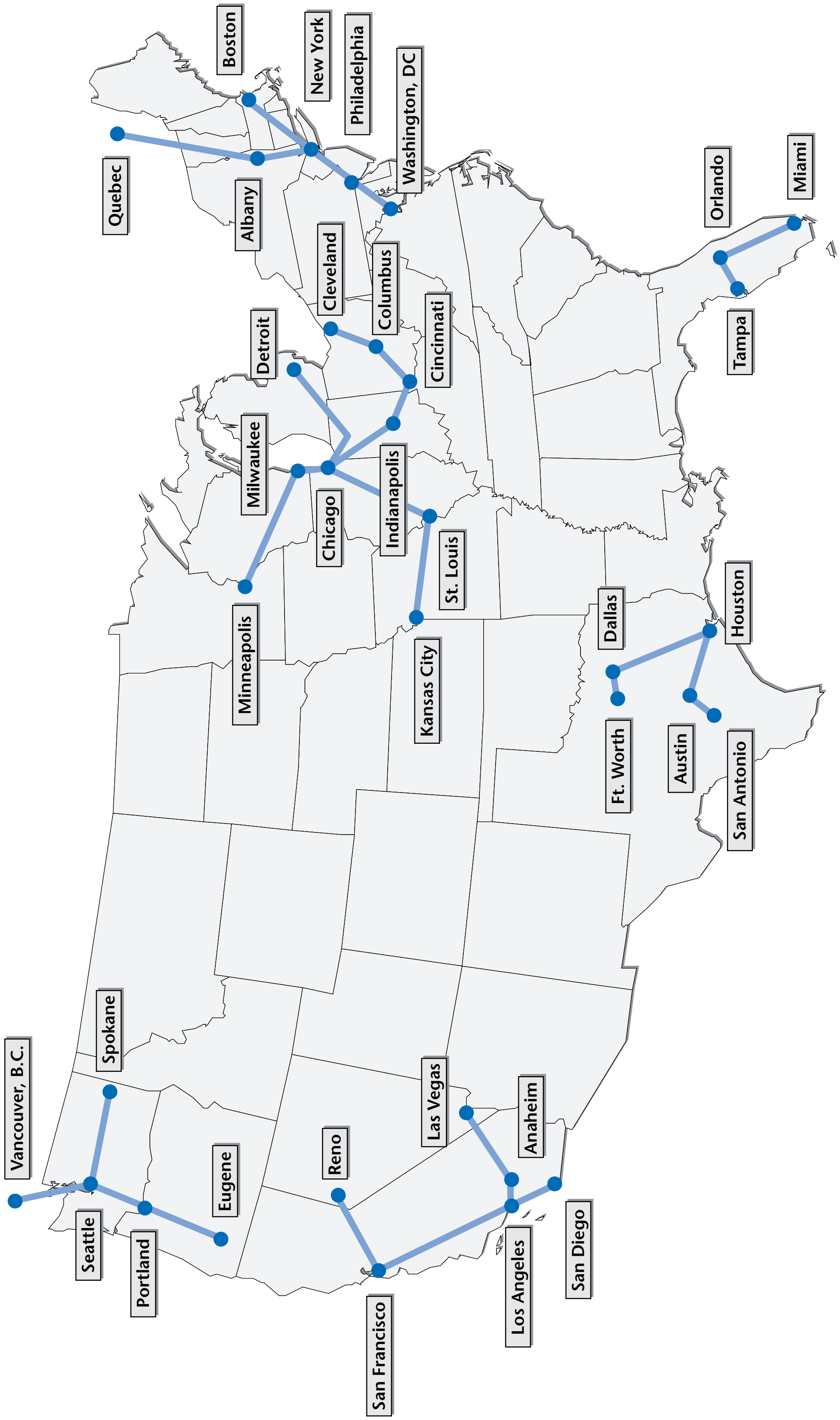

Figure 6-2. Intercity Corridors Tentatively Proposed for High-Speed Rail

6.8 Telecommunications

Recent advances in telecommunications are often promoted as alternatives to business travel.

These new technologies may also indirectly stimulate additional demand for business travel.

Recent advances in telecommunications are often promoted as alternatives to business travel that can save money, facilitate rapid response, improve customer service, increase productivity, and be as effective, or nearly as effective, as being there in person. Video teleconferencing, facsimile, electronic data interchange, high-speed networks, and other developments in telecommunications could affect the demand for passenger, overnight package, and cargo air transportation services, particularly as these new technologies mature, improve in quality, and become more cost-effective.

According to a recent report,[3] most of the studies that have analyzed the effects of these recent innovations in telecommunications have examined only the direct, negative impact the new technologies may have in substituting for certain types of business travel. The report points out that, although difficult to quantify now, it is reasonable to suggest that these new technologies may also indirectly stimulate additional demand for business travel. As workers become more productive and companies more efficient, "cost savings and productivity gains will enable a significantly higher number of companies to sell their products and services in areas not targeted before due to higher operating costs."

3. *making connections: how telecommunications technologies will affect business and leisure air travel*, prepared for the Federal Aviation Administration, Office of Aviation Policy, Plans, and Management Analysis, by Apogee Research, Inc., February 1994.